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AMSAT NEWS SERVICE
ANS-216

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see:
http://www.amsat.org/mailman/listinfo/ans

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ANS-216 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 216.01
>From AMSAT HQ KENSINGTON, MD.
DATE YYY
To All RADIO AMATEURS
BID: $ANS-216.01

## CAS-7B Designated BIT Progress-OSCAR 102 (BO-102)

On July 25, 2019, the CAS-7B (BP-1B) microsatellite was launched on a Hyperbola-1 launch vehicle from the Jiuquan Space Center, China. CAS-7B (BP-1B) was developed by the Chinese Amateur Satellite Group (CAMSAT), and in cooperation with the Beijing Institute of Technology (BIT). CAMSAT completed the project planning, design, build, and testing, and manages the on-orbit operation of the satellite. BIT provided the satellite environmental testing, launch support, and financial support. Many students from BIT were involved with the project, learning about satellite technology and amateur radio. The satellite carries a CW telemetry beacon and FM repeater that has been

active since launch.

At the request of CAMSAT and the BIT team, AMSAT hereby designates CAS-7B (BP-1B) as BIT Progress-OSCAR 102 (BO-102). We congratulate the owners and operators of BO-102, thank them for their contribution to the amateur satellite community, and wish them continued success on this and future projects.

[ANS thanks Drew Glasbrenner, KO4MA, AMSAT VP Operations and OSCAR Number Administrator, for the above information]

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AMSAT and ARISS Designing Amateur Radio System for Lunar Gateway

As announced at the AMSAT Forun at the Dayton Hamvention, AMSAT and ARISS are working on the design of a ham radio system for NASA's Lunar Gateway. The Gateway will be a small spaceship in orbit around the Moon that will provide access to more of the lunar surface than ever before with living quarters for astronauts, a lab for science and research, ports for visiting spacecraft, and more. First sections of the Gateway are scheduled for launch in 2022.

To make this happen we are leveraging the work and expertise of the world-wide AMSAT organizations and the international ARISS community in this endeavor. We have an international team working this and are meeting 2x a month to mature the concept. In May we presented our solid concept to NASA and got great, positive feedback. This was followed up a few weeks later at the ARISS-I meeting at the Canadian Space Agency (CSA) in Montreal where we received great feedback from the CSA Gateway Program Manager after he saw our presentation.

The AREx (Amateur Radio Exploration) team have done some really good work. The challenge for amateurs will be on the order of a 30 dB signal path loss as compared to LEO. But the link margins on our design seem to close.

AMSAT NA, UK & DL and ARISS-together--are working this phenomenal ham radio challenge.  Come to the AMSAT-NA Symposium in DC to hear more.

[ANS thanks Frank Bauer, KA3HDO, AMSAT V.P. for Human Spaceflight Programs, for the above information]

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18:15 UTC on August 4. There are currently twelve separate images being sent at 145.800 MHz FM in the SSTV mode PD-120. As always, activities are subject to change dictated by the crew's schedule.

Once received, images can be posted and viewed by the public at http://www.spaceflightsoftware.com/ARISS_SSTV/index.php and users can receive a special SSTV ARISS Award for posting images.
See https://ariss.pzk.org.pl/sstv/ for details.

Also for simplicity, a new information tab for SSTV events has been added to the ARISS website, under the General Contacts pulldown menu at www.ariss.org. The latest updates can also be found at the ARISS Facebook site Amateur Radio On The International Space Station (ARISS) and on Twitter @ ARISS_status.

[ANS thanks ARISS and Frank Karnauskas, N1UW, for the above information]

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AMSAT Member Named Young Ham of the Year

Dhruv Rebba, KC9ZJX, of Normal, Illinois, has been selected as the 2019 Bill Pasternak WA6ITF Memorial Amateur Radio Newsline Young Ham of the Year. Dhruv, 15, is the son of Hari Rebba, VU2SPZ, and Shailaja Panyam. He is entering his sophomore year at the Normal Community High School this fall.

He is a member of the Central Illinois Radio Club. Dhruv earned his Technician Class license in 2013 when he was only 9 years old. He followed it up by passing the test for a General Class license a year later. Dhruv says his interest in amateur radio was sparked by a 2013 visit to the Dayton Hamvention(R) with his father, a long-time amateur radio operator from India who settled in the U.S.

"He was going to the Hamvention and so I wanted to tag along," Dhruv recalls. "There I got to see all the cool stuff like the Morse-Code keyers and all the radios and everything and I decided to start studying for my Technician class."

After getting his license, Dhruv became involved in Field Days and public service events with the Central Illinois Radio Club, including the "We Care Twin Cities Marathon" and the "Hop on for Hope Bike Ride/Walk." Dhruv says he found a way to combine his interest in space and engineering with his new hobby. He joined AMSAT (Radio Amateur Satellite Corporation) and pursued his dream of a school contact with an astronaut aboard the International Space Station.

In October 2017, he served as the lead control operator for an Amateur Radio on the International Space Station (ARISS) contact with students at his school - the Chiddix Junior High School in Normal, IL - with astronaut Joe Acaba, KE5DAR. In late July of this year, Dhruv helped to facilitate another ARISS contact with international Scouts attending the World Jamboree in West Virginia and monitored the contact from his home.

ARISS presentations at Dayton and Huntsville, his selection as an ARISS mentor and networking with those putting together the ARISS contact for the World Jamboree led to his role in the July 2019 contact. In 2018, Dhruv was selected for the Dave Kalter Memorial Youth DX Adventure. He traveled to Curacao Island in July 2018 where the PJ2Y team made a record 6,262 contacts with 135 countries over five days. Dhruv says he enjoyed operating his favorite mode, SSB. Dhruv has earned many accolades for his amateur radio pursuits including the

"Young Ham Lends A Hand" award at the 2019 Dayton Hamvention Youth Forum; "Presidential Award" from AMSAT; and the "Young Achievers Award" from the Radio Club of America.

He also has traveled to India to promote amateur radio awareness and spoke at the ZPH School, NP Kunta, India in January 2018. He discussed the importance of wireless communications and their role during disasters. Dhruv started the "Universal Help Foundation" to help underprivileged students on a global scale. Among his first projects was a digital project at a girls' high school in NP Kunta, India this past January. Dhruv also has an interest in robotics and has worked as a mentor helping elementary school students build robots. This past April, Dhruv's "MetalCow Robotics" team finished fourth overall in the international competition sponsored by NASA in Detroit.

Dhruv says a visit to the AMSAT booth at the 2019 Dayton Hamvention prompted him to sign on for the "Amateur Radio Exploration on the Moon" project. "We're designing an amateur radio system to be on the Gateway Space Station and the Moon," he says. Dhruv will be recognized during the Huntsville Hamfest on Aug. 17 in the Von Braun Center, Huntsville AL.

The Young Ham of the Year was inaugurated by William Pasternak, WA6ITF, in 1986. Upon his passing in 2015, Bill's name was added to the award as a memorial to his commitment to recognizing the accomplishments of young people to the amateur radio service. Amateur Radio Newsline, CQ Magazine and Yaesu USA are primary sponsors of the award, along with Heil Sound Ltd. and Radiowavz Antenna Company.

[ANS thanks CQ Communications, Inc. for the above information]

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AMSAT member Wins Alabama Outstanding Youth Ham Award

The 2019 Alabama Outstanding Youth Ham Award goes to Marissa Robledo, W4AQT. This particular Amateur Radio operator gazes at and studies the skies almost daily. She has a deep interest in satellite communication and loves sharing that interest with others. Her passion is evident in awards she has received, forums where she has presented, along with the activities in which she participates.

Marissa is a twelve year old General class license-holder who lives in Montgomery, AL and is devoted to consistently learning and growing in the great hobby of Amateur Radio. She exhibits enthusiasm, knowledge, and rapid growth in many areas of Amateur Radio.

The formal presentation of this award will take place at the 2019 Huntsville Hamfest on August 17th, 2019 at 12:30 p.m.

[ANS thanks Bryant Rascoll, KG5HVO, Alabama Section Youth Coordinator, for the above information]

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ARISS Next Gen System Completes Critical Flight Certification Tests

The Interoperable Radio System (IORS), ARISS' next generation radio system successfully completed a battery of stressful tests required as part of the final certification of the hardware for launch to and operation on the International Space Station.

During the week of July 8, the IORS, consisting of the JVC Kenwood D-710GA Radio and the AMSAT developed Multi-Voltage Power Supply, suc-

cessfully completed a series of Electro-magnetic Interference (EMI)/ Electro-Magnetic Compatibility (EMC) tests to ensure that the ARISS hardware will not interfere with the ISS systems or other payloads. Testing continued into the following week, where the IORS successfully passed power quality and acoustics testing. These tests verified that the ARISS IORS will not introduce harmful signals back into the ISS power system and is quiet enough to meet ISS acoustic requirements. ARISS Hardware Team members Lou McFadin, W5DID and Kerry Banke, N6IZW were at the NASA Johnson Space Center supporting this two week battery of tests in concert with the NASA test and certification team.

Kerry Banke states, “Since the IORS is being qualified to operate on 120VDC, 28VDC and Russian 28VDC as well as transmitting on VHF or UHF, a lot of test combinations were required to cover all cases. Each input voltage type was also tested at low, medium and high line voltage. Moreover, additional permutations were required to test the IORS under no load, medium load and full load at each voltage level. So it should not be surprising why the tests took two weeks to complete.”

Successful completion of these tests represents a key milestone in preparing the IORS for launch. ARISS can now begin final assembly of the flight safety certification in preparation for launch. ARISS is working towards launch ready status by the end of the year.

[ANS thanks ARISS for the above information]

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CALL      Jul     01Aug
      AA8CH 550 584
      WD9EWK 567 575
      NS3L 475 505
      AE5B ??? 442
      K9UO 400 425
      W5TD 381 384
      KE8FZT 325 350
      K5IX 300 325
      PS8ET 211 275
      WW8W 201 228
      AB1OC 184 215
      KJ4EU 151 206
      AA4QE 102 204
      N7EGY 169 200
      ND0C 153 200
      PR8KW  New 200
      LW2DAF 125 130
      KC9VGG 102 127
      KC9UQR New 113
      XE2YWH New 102
      K5ZM New 101
      N4QX New 100
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If you find errors or omissions. please contact W5RKN. This list was developed by comparing the ARRL .pdf listings for the two months. It's a visual comparison so omissions are possible. Apologies if your call was omitted.

Thanks to all those who are roving to grids that are rarely on the birds. They are doing most of the work!

[ANS thanks Ron Parsons, W5RKN, for the above information]

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LightSail 2 Successfully Demonstrates Flight by Light

The Planetary Society's crowdfunded LightSail 2 spacecraft is successfully raising its orbit solely on the power of sunlight.

Since unfurling the spacecraft's silver solar sail last week, mission managers have been optimizing the way the spacecraft orients itself during solar sailing. After a few tweaks, LightSail 2 began raising its orbit around the Earth. In the past 4 days, the spacecraft has raised its orbital high point, or apogee, by about 2 kilometers. The mission team has confirmed the apogee increase can only be attributed to solar sailing, meaning LightSail 2 has successfully completed its primary goal of demonstrating flight by light for CubeSats.

On Monday, July 29, LightSail 2 sent home a new full-resolution image captured by its camera during solar sail deployment. The perspective is opposite to last week’s full-resolution image and shows the sail more fully deployed. LightSail 2's aluminized Mylar sail shines against the blackness of space, with the Sun peeking through near a sail boom.

LightSail 2 uses the callsign WM9XPA and transmits its beacon on 437.025 MHz, AX.25, FSK, 9600 bps. Beacon parameters and more information on the spacecraft may be found at: https://tinyurl.com/y5r6758v

[ANS thanks The Planetary Society for the above information]

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A DXpedition is planned to St Pierre et Miquelon, August 10th through the 18th. The team will operate as T05M will from Ile aux Marins on 6-160m, but there is a possibility of some FM Satellites. Keep an eye on their website for updates: http://fp2019.net/

+Santa Rosa Island, CA (CM93) – August 12-14, 2019
Ron, AD0DX, is heading back to Santa Rosa Island, August 12th -14th. When not distracted by the feathered-birds, Ron will be on FM and linear satellites as W6R. Keep an eye on Ron's Twitter feed for updates at the dates get closer. https://twitter.com/ad0dx

+Goose Bay, Labrador (FO93) August 12-14, 2019
Chris, VE3FU, will be visiting family / friends and maintenance of his HF remote station in FO93, but he should be on the FM sats as VO2AC. Chris will try to post here before each pass, so keep an eye on his Twitter feed: https://twitter.com/ChrisVE3FU

+6Y - Jamaica (FK18) August 12-19, 2019
Philippe, EA4NF will be operating from JAMAICA (IOTA NA-097 – Grid FK18) in Satellite with the special call 6Y4NF from August 12 to 19, 2019. QRV Satellite in FM and SSB. QSL via LoTW. Keep an eye on Philippe's Twitter feed for further updates : https://twitter.com/EA4NF_SAT.

Please submit any additions or corrections to ke4al (at) amsat.org
Remember to check out W3ZM On the Road for additional upcoming activations! https://www.amsat.org/events/was-w3zm/

[ANS thanks Robert Bankston, KE4AL, for the above information.]

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Satellite Shorts From All Over

+ The Space Communicator Club of Las Flores, Calif. provide a public website for monitoring Satellite APRS Packets received in the most recent 24 hour period: http://spaceCommunicator.club/aprs
(ANS thanks Robert MacHale, KE6BLR, for the above information)

+ The Federal Communications Commission voted on August 1 to create a new licensing category for small satellite companies that will dramatically reduce launch fees. Full story at: https://tinyurl.com/y4k588ko
(ANS thanks Texas Public Radio for the above information)

+ SpaceX's robotic Dragon cargo capsule arrived at the International Space Station on July 27, setting a new record for SpaceX's reusable spacecraft. The Dragon, which launched July 25 from Florida's Cape Canaveral Air Force Station atop a two-stage Falcon 9 rocket, was on its third mission to space.
(ANS thanks Space.com for the above information)

+ W3XO, the call sign held by former AMSAT President Bill Tynan (SK) has been issued to the Hill Country Amateur Radio Club of Kerrville, Texas, as a memorial. Bill was a leading member and past president of that club, as well as of AMSAT.
(ANS thanks Ray Soifer, W2RS, for the above information)

+ Ballots for the 2019 AMSAT Board of Directors election have been mailed. Candidate statements may be found at https://www.amsat.org/2019-board-statements/

+ Hackaday, an online journal for technical experimenters, published an article about the history of the AO-7 satellite on August 2. It

can be read at: https://tinyurl.com/yyy5oapn
(ANS thanks hackaday.com for the above information)

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73 and Remember to help keep amateur radio in space,
This week's ANS Editor,

K0JM at amsat dot org